

**Developing Principles of  
Communication in Order to Effect  
Fire Prevention Behavior Among High  
Fire Risk Young Adults  
Ages 18-25 Years**

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DEVELOPING PRINCIPLES OF COMMUNICATION IN ORDER TO EFFECT FIRE PREVENTION  
BEHAVIOR AMONG HIGH FIRE RISK YOUNG ADULTS--AGES 18-25 YEARS

A Review of Pertinent Communications Research  
and Implications For Future Research

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INTRODUCTION

Sucessful multiple use management of wild land requires elaborate provision for fire prevention. This is necessary because most wild land is covered with potential fuel in the form of forests, range grasses, wildlife food and shelter, human suburban abodes, and watershed cover. The risk of these fuels being set on fire is dependent upon a fire starting agent, which, it has been indicated,<sup>1</sup> is man in 79 percent of California forest fire starts. Taking only the man-caused fires, 21 percent of these are caused by children and the remaining 79 percent by adults. Three-fourths of the children-caused fires are started by children 10 years and under.<sup>2</sup> Therefore, children 10 and under are responsible for 16 percent of man-caused fires and children 11-17 years for only 5 percent. Thus we may conclude that it is more important to concentrate on the adults causing 79 percent of man-caused fires rather than on the older group of children who cause only 5 percent. (Studies are already being conducted with the younger group of children.) The

Butte County Survey identified the highest fire risk population among its frequent wildland users (as inferred from the users' answers to a series of fire prevention knowledge and attitude questions) as young persons under 25 years of age. This survey information, together with the previous figures, strongly points to young adults between 18 and 25 years of age as the highest fire risk segment in the population (at least in Butte County, California). Thus, it would appear that this is a very important age group upon which to focus fire prevention efforts.

The BUCO survey supplied us with still further information by which we may more sharply focus our efforts. The survey revealed that this young high fire risk population also had the following characteristics: unmarried; a limited amount of schooling for their age; not the chief wage earner in the family, but, if employed, a tendency to part-time jobs in the operative, clerical or laborer occupations, with their total family income in the low to medium range.<sup>3</sup> "They appeared to spend less time than average listening to the radio, but their TV watching was higher than average. They were low in organizational membership except for religious and youth organizations." (Folkman, 1965)

Clues to further characteristics of the high fire risk population are provided by a series of reports arising out of a study concerning school achievement, personality and recreational differences between smokers and nonsmokers (Salber and Rochman, 1962, 1964) the majority of whom were 16 and 17 year old high school students. Since our target population members are low-scholastic achievers and since this study found the proportion smoking to be larger among the low-achievers than the high achievers (two-thirds vs one-third),<sup>4</sup> we may infer that the

personality differences of smokers (three-fifths of whom were low achievers) probably are characteristic of our target population (at least approximately so of the highest fire risk segment of it: the smokers).

The study found that smokers (compared to nonsmokers) watch television more, go to movies more often, and read fewer books. They also are more frequently car owners and go to more dances than do nonsmokers, but they play sports less and belong to fewer clubs than nonsmokers.

More information, such as that provided by the above study, regarding our target population's behavioral norms, interests, and values would help, not only to determine whether, in fact, these persons are behaviorally high fire risk (i.e. careless) but would help to further circumscribe those who are high fire risk among the 18-25 year olds. With this information, fire prevention propaganda, intended to effect careful fire behavior, could be designed to attract the particular attention of this target group. In other words, until an observational study and/or an in-depth survey of the high fire risk group can be done, we are only guessing if we should attribute to the target group the tastes of the general group 18-25 years of age i.e. rock music, mod dress, interracial gatherings, long hair, etc. Perhaps, the fire risk group are pent-up straights, middle-class aspirants, reacting to the struggle to "make-it"; have more acquisitive interests, feel competitive with minorities, are interested in racey cars, dude ranches, spectator sports, etc., rather than in rock music and brotherly love or whatever combination.

Knowledge of the particular combination of beliefs, behavior patterns, interests and values, of the high fire risk group among young adults, is crucial<sup>5</sup> if an attempt is to be made to effectively utilize

the mass media in fire prevention campaigns. Knowledge of the fire risk group's interests is crucial for two reasons: 1) mass media messages are perceived, if at all, selectively and retained selectively; 2) our target population has the demographic characteristics of groups known to be hard-to-reach and slow to innovate (change customary practices).

## PROBLEMS IN EFFECTING CHANGE IN OUR TARGET POPULATION

### Selective Exposure, Perception, and Retention

Numerous studies (Griessman and Bertrand, 1967; Griffiths, 1960; Hovland, 1966; Hyman and Sheatsley, 1947; Klapper, 1963; Schramm, 1963)\* indicate that the mass media have a questionable effect upon the change of attitudes and/or behavior. Potential recipients tend to become exposed, to perceive, and to retain messages in a selective manner. The fire prevention message, then, is more likely to be seen or heard, understood, and remembered, by those who already agree with its content. Griessman and Bertrand (1967) found support for this view in their study of Factors Related to Communication of Forest Fire Prevention Messages. Persons who understood the concepts making up a slogan distorted or readjusted the message in order to make it suit their particular predispositions.

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\* A longer version of this paper containing summaries of all the studies mentioned in this paper may be obtained from the author at the Pacific Southwest Forest and Range Experiment Station, Berkeley, California.

## Demographic Characteristics of the Hard-To-Reach and Slow to Change

(As implied by findings re: the "fast to change")

Several fields of study, concerned with the diffusion of innovative practices, have found similar results with respect to some of the characteristics of those who are the first to assimilate new practices. In particular, a great deal of work has been done by rural sociologists as well as in the field of preventive health.

If we assume that the behavior of our target population, the "fire-risk group", is congruous with their low knowledge-poor attitude scores, then our aim is to change their behavior so that it is fire prevention oriented. By fire prevention oriented, we mean that they are careful rather than careless about how and where they discard used matches and cigarettes; that they clear an area sufficiently before lighting a fire; that they know how to put out a fire completely and do so before leaving it, etc.

If we define an innovation as "some change in patterns of conduct or action related to some culture trait or item... where a new item means some combination of culture traits, mechanical, symbolic, normative or other which has not previously been widely incorporated into the cultural system of the relevant group or society" (DeFleur, 1966) then it can be more clearly seen how diffusion of innovations research findings are applicable to our particular problem of changing customary behavior.

Most innovation diffusion research is descriptive, i.e. it describes the characteristics, for instance, of the adopters vs the non-adopters. If it turns out that our target population is a non-adopter group, then knowledge of its characteristics is not too helpful in our job of changing the group's behavior unless the particular characteristics chosen to describe non-adopter groups provide clues as to how we may reach (attract the attention of) our target group. In other words, if our target group is a non-innovative (rigid and consistent in patterns of conduct) type group of people, ours is a particularly difficult problem, since what we want them to do is to innovate, that is, to change their conduct.

From a number of studies reviewed (Bylund, 1963; Cassel, 1963; Kegeles et al, 1965; King, 1965; Ramsey, Polson and Spencer, 1959, Subcommittee for the Rural Sociological Society as cited in Hoffer, 1958) which express their results mainly in terms of the characteristics of those who are highly innovative, we are able to infer that our target group, lacking these characteristics, is a non-innovative group. If we should translate those results which are in agreement, we would find the following are characteristic of non-innovators (or low innovators):

low income

low educational level

blue-collar occupations

low class

low social participation (low participation in formal organizations)

do not have children

not child oriented

low knowledge regarding subject and means of change

high TV watching

low newspaper readership

low optimism

high security orientation

The fire risk group in Butte County displayed many of these characteristics. They came from families with low or medium income. They had low educational attainment. If employed, they tended to have blue-collar jobs, except for clerical. They were low in social participation except for religious and youth organizations. Presumably they are not children oriented since they are young and unmarried. They are high in TV watching and low in knowledge regarding fire prevention. We do not know whether they are low in optimism (high fatalism?) or whether or not they have a high security orientation.

Since the characteristics of our target group indicate it is a non-innovative group, the question becomes, does knowledge of these characteristics give us any clues as to how we might reach them in order to affect their fire behavior? It suggests an indirect way to reach them: To support programs which aim to improve the educational level, provide employment, and increase income to the poor and lower-income segments of the population.<sup>6</sup> Tangible improvements in these areas would tend to make present lower-class members of the society more optimistic about their future. Since, the more income, the more education, the higher the social class, and the more optimism about one's future, the more innovative behavior we can expect, we might be able to effect some change in conduct toward society's natural resources, (or natural resource managers) if some of society's inequities were alleviated.

A more direct way to attempt changes in fire-related behavior is to provide the target group with knowledge concerning the subject of, and means of, fire prevention. This is in accord with Cassel's (1963) finding that the more people know about a program and the problem it intends to alleviate, the more they go along with it. In other words, we should not neglect to provide our target group with the know-how and the reasons for fire prevention. The reasons for fire prevention should be presented in such a way that they encourage in this group a belief in fire prevention (in line with Kegeles et al's--1965--finding that those with a belief in early detection were more likely to take "preventive" measures.) Also, Cassel's (1963) finding that personal fear of polio increased vaccine acceptance only among the poorly educated, suggests that fire prevention propaganda which poses a personal threat may be effective in reaching our poorly educated target population. However, we should be cognizant of the fact that there are group differences in perception (Jenkins, 1966); that although a group may perceive a problem as a personal threat, they may also have a fatalistic perception of events which would prevent behavioral change. If we should find that our target group is fatalistic, we may need to develop special approaches in order to overcome this.

Other characteristics of our target population suggest the types of communication vehicles we should use, i.e. TV rather than radio or newspaper; approaches to religious and youth organizations, and to places of employment of blue-collar and clerical workers.

## PREFERRED METHOD OF MESSAGE TRANSMISSION

Given that we wish to convey a fire prevention message to a hard-to-reach group, what does research to date suggest is the best method for conveying that message, in whatever form (emotional vs rational, general vs specific, etc.)? In other words, without as yet deciding how our message will be clothed, has research advanced to a point such that its results can indicate the best vehicle for communicating to particular groups? That is, should we communicate our message by means of interpersonal communication, or interpersonal communication in combination with certain mass media, or mass media alone? If so, who should contact whom? What media should be used? At whom should it be directed? On the basis of a review of pertinent research, it would appear that the question of how best to communicate a message is far from settled.

The literature suggests (Katz and Lazarsfeld, 1955) that early research was based on an assumption that the mass media had a direct influence upon each of the many individuals making up the mass audience attending to it. Much of the research done prior to and during World War II was based upon this assumption and therefore concerned itself with the relative impact of various media contents on the individuals making up an audience. Although there was a recognition that different elements and their arrangements in media content might have differing impact, the assumption of mass media omnipotence resulted in a disregard for variables outside the media itself which might affect the reception of media messages. Consequently, much of media research has been (and still is) done with a captive audience in an artificially contrived laboratory situation.

The credibility of results from research conducted with captive audiences came into question serendipitously. Lazarsfeld, Berelson and Gaudet's<sup>7</sup> analysis of the 1940 presidential election campaign (The People's Choice) "unexpectedly revealed that the majority of voters were not only influenced by mass media, but that they were influenced by other people." This finding led the authors to formulate the hypothesis: 'Ideas often flow from radio and print to the opinion leaders and from them to the less active sections of the population.' It was not possible for them to test this hypothesis, for the design of their study--a survey of a random sample of individuals abstracted from their social environments--did not anticipate this finding of the importance of interpersonal communication and therefore did not provide the data necessary to test it (Katz, 1957).

#### Mass Media in Combination With Interpersonal Communication--Results of Tests of the Two-Step Flow of Communication Hypothesis

Katz (1957) reviewed several studies conducted subsequent to the formulation of the two-step flow hypothesis ('Ideas often flow from radio and print to the opinion leaders and from them to the less active sections of the population.') He concluded that these studies, the Decatur, Elmira and the Drug Studies, provided support for the hypothesis in that they showed 'the strong impact of personal relations in the making of decisions. Furthermore, these three studies also showed that leaders were more exposed to the mass media than non-leaders. However, Katz, while presenting general support for the hypothesis, also found from these studies that the communication process was apparently not as simple as the two-step flow hypothesis would suggest. He stated, "despite

their greater exposure to the (mass) media, most opinion leaders are primarily affected not by the communication media but by still other people."<sup>8</sup>

The results of a number of more recent studies (Van Den Ban, 1964; Troidahl, 1966; Mendelsohn, 1965; Mason, 1963; Medalia and Larsen, 1958) do not confirm the two-step flow hypothesis. The findings of other studies (Dickerson and Bertrand, 1969<sup>9</sup>; Kirchner, 1969<sup>10</sup>; Sicinski, 1963; Wright and Cantor, 1967) suggest substantial modifications in the hypothesis' concepts are necessary.<sup>11</sup>

Van Den Ban (1964) and Mason (1963) both found that all farmers, regardless of whether they were leaders or followers, used both mass media and personal contact. According to the former author, mass media are important in the initial adoption stage and personal contact in the final adoption stage. Paralleling this is Mendelsohn's (1965) finding that news of a crisis is first learned from the mass media and then verified with personal sources. Mason (1963) found that the relative use of the mass media by leaders and followers depended upon the type of farming practice. He concluded that use of information from all sources increases as farmers both high and low in influence pass through stages of the adoption process. Troidahl's (1966) was the only study that relied upon comparison of a control and experimental group to determine whether a specific media message was noticed by leaders and/or followers. He found that only the experimental followers had a true awareness of the message (an awareness significantly greater than that of the control followers who did not see the specific media message.)

Troldahl (1966) also found that neither the media, nor personal advice sought, produced a reliably detected effect on belief change in either opinion leaders or followers. (An exception was one media recommendation out of six produced belief change in followers only.)

Sicinski's (1963) finding, that not only leaders and followers exist, but also leader-follower types (Kirschner's active leader-active follower) who are those that make the most use of the mass media, may help to explain why the two-step flow of communication hypothesis sometimes appears to apply and most times does not. In other words, leaders and followers may not make great use of mass media, but leader-followers do.

If all the various new classification schemes (Dickerson and Bertrand, 1969<sup>9</sup>; Kirchner, 1969<sup>10</sup>; Sicinski, 1963; Wright and Cantor, 1967) are pooled one arrives at seven different communicator roles. Perhaps future hypotheses should take these distinctions into account:

- active leader (initiator-legitimizing-diffuser)
- active leader - active follower<sup>12</sup> (gregarious type)
- passive leader - active follower<sup>12</sup> (legitimizing)
- active follower (opinion seeker)
- passive follower
- isolate or independent
- opinion avoider

If our target group is not interested in fire prevention, either we must figure out how to interest them (predispose them) or according to Wright and Cantor (1967) they will tend to opinion avoidance rather than opinion seeking. Our one consolation is that their study found opinion avoiders were more likely than seekers to watch television. If we could interest our target group in fire prevention with TV messages clothed

specially to attract its attention, and if the hypothesis is true (which appears to have the support of several studies: Mason, 1963; Mendelsohn, 1965; Van Den Ban, 1964) that, followers as well as leaders learn of innovative behaviors or news first through the mass media and then seek further information or confirmation from personal sources as well as other mass media sources--then we should follow-up mass media approaches with personal contact approaches.<sup>13</sup>

The next sections cover the literature, not specifically concerned with the two-step hypothesis, but concerned with the capability of the various mass media and personal contact, tested singly and comparatively, to effect behavior change or information gain. These sections will discuss in more detail the relative importance of various media and personal contact, as well as attempt to pinpoint the best method of personal contact (via groups) to be used.

#### Mass Media

It has already been suggested that TV may be the best type of mass media for communicating with our low-income, less than high school educated target population, as its members are reported to attend to TV more than average and radio less than average (Folkman, 1965; Hazard, 1962). What other evidence is there that TV may or may not be the best type of mass media for reaching and then effecting knowledge gain and/or behavior change in a group with the characteristics of our target population?

Group differences in TV watching and ownership: The evidence suggests that TV watching is higher in low socio-economic groups than in high socio-economic groups (Geiger and Sokol, 1959), except perhaps for the very lowest socio-economic levels which have a lower incidence of TV ownerships (Dernberg, 1958). It is further suggested that within the low-income groups we would find that Anglos watch TV more than Blacks and Mexican Americans (Dernberg, 1958; Wade, 1969), those with other leisure resources more than those without them (Meyersohn, 1968), high school drop-outs more than those with more or less education (Dernberg, 1958), smokers more than nonsmokers (Salber and Rochman, 1964), the alienated more than the nonalienated (MacLeod et. al., 1964-65), the opinion avoiders more than the opinion seekers (Wright and Cantor, 1967), and the non-innovators more than the innovators (King, 1965).

Our high fire risk target group possesses several of the above mentioned characteristics (low socio-economic status, Anglo, high school drop-outs) and, by inference, several other characteristics associated with a higher incidence of TV watching.

Does TV effect change in behavior or information gain? Too little research was discovered in the literature to derive a definitive answer to the question as to whether TV can effect behavior change or information gain. Hazard (1962) found that TV did not effect information gain among those of low education, regardless of story content and method of presentation. Parker (1961) found that TV displaced comicbook reading, but was not used in place of traditional print media as an information source. A nonexperimental report (Barker, 1968) suggested that TV may

effect information gain and ensuing behavioral change among those of low education and low occupational level, where the subject is of particular salience; i.e. tells where to apply for an available job. (A study of meal planners did not distinguish between those of low and high education, so we do not know whether TV has a differential effect on these groups. We only know it has a greater effect than other mass media on meal planners in general.)

Comparative effectiveness of various types of mass media in producing change or information gain: On the basis of the results of several

studies it is not possible to conclude that any one mass medium is more effective than another in producing change or information gain. Most frequently mentioned as the source of information was radio in two of the studies (Larsen and Hill as cited in Medalia and Larsen, 1958; Mendelsohn as cited in Spitzer, 1965) newspapers in one (Medalia and Larsen, 1958) TV in two (Christiansen, Folkman, et. al., 1969; Griessman and Bertrand, 1967) and an audio visual presentation in another (Spector, 1964).

One study, (Yankelovich, n.d.) on the basis of verbal responses evoked by matched radio, magazine, and TV commercials, concluded that radio is the most suitable for a number of different purposes: presenting a serious message or an exaggerated claim, creating a mood, reinforcing favorable attitudes or overcoming resistance. TV was found most effective in only one situation--where demonstrating a product is meaningful.<sup>14</sup> Magazines were most effective where color and detail are important. In another study, comparison of print, tape recordings and motion pictures (Skinner, 1963<sup>15</sup>) showed no significant differences in persuasive effects.

Effect of using many forms of mass media in one campaign: Discovered in the literature were evaluations of three intensive campaigns employing numerous forms and quantities of publicity. Of the three campaigns, only one was considered successful. In this campaign immediate execution of the hoped for behavior was possible. The success of this campaign was attributed to personal contact rather than the large-scale mass media efforts employed.

(1) The UNESCO (1953) effort to spread knowledge regarding the Universal Declaration of Human Rights relied on print, film, radio, lectures and meetings. It was found that the largest number of persons gained information from newspapers and magazines. However, the total group affected was small. (2) The Dunfermline and Clydebank (Martin and Stanley, 1965 and 1966) anti-smoking campaigns attempted to form, in addition to utilizing vast mass media resources, anti-smoking groups. Dunfermline used counselors at an exhibition hall to enroll group members, and Clydebank tried enlisting leaders in existing organizations to start anti-smoking groups. Neither city's campaign was considered effective in changing smoking behavior. (3) A smallpox vaccination campaign (Bharara, 1963) used, not only mass media publicity and group meetings, but, in addition, each household head of all families in the target population was individually contacted and persuaded by interviewer--vaccinators, sometimes with the assistance of village leaders. This campaign was successful. Fully 82.6 percent of the target population obtained a vaccination. The success was attributed, first, to the individual personal contacts, and second, to group effort.

## Mass Media Vs or Complemented by Person-to-Person Communication

Six studies comparing the effectiveness of mass media vs or complemented by person-to-person communication were discovered in the literature search. Four (Murray, 1964; Hulka, 1966; UNESCO, 1967; Saxena and Warlow, 1966) showed the importance of person-to-person communication in effecting change. In two of these four studies (Murray, 1964 and Hulka, 1966) person-to-person communication of a health message was more effective than mass media in effecting behavioral response. In a UNESCO (1967) study--greater information gains were shown by villagers who listened and discussed special radio broadcasts in forums, than by those in villages where there were merely broadcasts and no forums. Saxena and Warlow (1969) found similar results when they compared group viewers and individual viewers of special TV programs. One study (Fisk, 1959) showed no difference in the impact of persons vs mass media in influencing purchase of new products. The fifth study (Allen and Angerman, 1968) found that, of three methods tried, a mailed form-letter invitation with a minimum of mass media publicity drew the most parents to a mass meeting on Smoking and Health. Of the two other methods used, one added considerable mass communications efforts, and the second substituted, for mass media, interpersonal dissemination of the news initiated by school and community agency personnel. (The comparative failure of the last two methods may have been due to a change in the appeal content rather than due to the methods of communication.)

A review of literature (Schramm ed. 1963) on farm innovators suggested that the efficacy of person-to-person communication or mass media depends upon its reaching the individual at the 'right' phase of the adoption process i.e. magazines at the awareness stage, neighbors at the ensuing two stages, and technical pamphlets at the trial stage.

### Personal Contact (Via Groups)

The use of personal contact via groups in the flow of fire prevention information or persuasion could be utilized in a number of ways:

- 1) Personnel from Fire Prevention or Information and Education could lecture to organizations of which our target population are members.
- 2) A Fire Prevention Officer, or person hired for the purpose, could initiate group discussion in our target population's organizations on the subject of fire prevention. This may or may not include a group decision regarding pertinent action to be taken.
- 3) A Fire Prevention Officer, or person hired for the purpose, could contact individual peer group leaders in the hope of convincing them they should initiate fire prevention normative behavior in their groups.<sup>16</sup>

The question is: 'What is the best method of personal contact via groups?' The importance of the small group in opinion formation has been emphasized by Katz and Lazarsfeld (1955). However, they explain that little research has been done combining communications research with small group research, because communications' research was originally predicated on the non-existence, or at best, on the irrelevance of interpersonal relations.

1) With respect to the first suggestion that Fire Prevention Personnel lecture to organizations of which our target population are members, Katz and Lazarsfeld (1955) present study results (Asch, Duncker and Berenda) which suggest that this will not work unless Fire Prevention Personnel, or the agency they represent, are prestigious for our target group's members. Asch found that groups of individuals were much more influenced to change their opinions when told of the opinions of a group which they considered congenial, than when they learned of the opinion of a group which they considered antagonistic. Duncker found that peer group influence was far greater than that of an adult authority figure on an experiment concerning modification of children's food preference through social suggestion. Further indication that "authority" figures may have less influence over opinions than congenial groups is offered in a study by Berenda which showed that classmates are more influential on their peers than are their teachers.

2) The findings on the efficacy of group discussion<sup>17</sup> and/or decision vs lecture for changing behavior or opinion seem to be balanced in favor of the group discussion--decision method. Lewin (1943) and Levine and Butler (1952) found that a group discussion--decision method was considerably more effective in changing behavior than was a mere lecture without discussion. Coch and French's (1958) study showed that employee turnover and aggression were inversely proportional, and production recovery directly proportional, to the amount of participation the employees had in designing work plan changes. The situations tested were: total employee participation, participation through representation, and no participation at all. Pelz (1958) and Gunn (1960)<sup>18</sup> in experimental situations found that group discussion was not more effective than other techniques or no influence attempt at all. However, Gunn's groups were not expected to make a group decision. Darity (1965) in a retrospective study of the factors influencing the continuance or discontinuance of taking oral contraceptive pills found that whether a subject had had positive or negative discussions with neighbors or friends about the pill was related to her future behavior with regard to taking the pill.

3) Koos (1943) contacted peer group leaders in an effort to diffuse nutrition knowledge among natural primary groups in a low-income urban population. The attempts' lack of success was attributed to the changing friendship patterns in an area of high mobility. Koos felt, since friendship patterns exist for the most part within local organizations, that the latter should be made the focus of future information diffusion

efforts. Erbe's (1962) findings lend support to this suggestion (if a graduate department is considered a local organization). In a study of a national sample of graduate students, he found that those who belonged to a group of students, who maintained informal contacts outside the classroom, were better informed than gregarious students who engaged in extensive interaction with other students in the department, but who were not members of groups.

A stop-smoking educational effort (Fuenning, 1968<sup>19</sup>) carried out through peer group members of college living groups did not counteract the prevailing influence of peers to start smoking. Parents were more influential than peers in getting college-age persons to stop smoking despite the stop-smoking educational program carried out by peer members.

Although the studies reviewed suggest that the most efficacious method of inducing change through personal contact is group discussion and decision initiated by a peer group leader, further research is definitely needed in order to develop conclusive knowledge covering the best method of personal contact for persuasive work. The studies suggest, to the writer, with respect to the problem of inducing fire prevention conduct, that the following hypothesis be tested: Persuasion through personal contact is best achieved by hiring a professional community organizer, who has rapport with peer leaders of primary friendship groups, which exist within secondary associations. (Our target population members were found to be high in religious and youth organizational membership.) This professional community organizer will be more likely than a Forest Ranger to convince the peer leaders to initiate group action (discussion followed by decision) which results in appropriate fire prevention conduct.

## PREFERRED CONTEXT OF MESSAGE TO BE COMMUNICATED

What do research results tell us is the best way to clothe a message in order that its persuasive attempt is successful? In other words, if we are using television as our communication vehicle, will the film be more effective if it is in color rather than black and white? Regardless of the type of media used, should information, or values, or both, be emphasized? If values, should they be threatened, and, if so, how much? Who should be portrayed as the transmitter of the message? Should the message be repetitive, specific or general, explicit or implicit, or subliminal etc.?

Several excellent reviews exist (Hoban, Jr., et. al., 1950; Hovland, 1954; Klapper, 1960; Cohen, 1964; Davis, 1964) of experimental studies done in the vein of what is referred to as the Yale school of communications research--a behavioristic before-after type of research testing effectiveness of various content approaches--which was predominant during World War II and into the '50's. Therefore no systematic attempt has been made to review these researches, many of which concern specific techniques of persuasion such as one-sided versus two-sided presentation, ordinal sequence of arguments, disparity between audience position and communicator's goal, and so on. Critical remarks regarding the generalizability of these "small range experimental findings" may be found in Mendelsohn (1964). This section's emphasis will rather be upon research done since these reviews were written and upon that which concerns techniques of persuasion not dealt with in the above mentioned reviews. It will include the findings of field studies, as well as some laboratory experiments. The higher than average

amount of TV watching of our target population has been taken into consideration in selecting what research would be reviewed. Thus, there is an emphasis upon TV related research.

TV viewers prefer light entertainment, particularly action programs such as Westerns, crime and adventure. Westerns are the most popular, with those classed as "other or general" coming out ahead of "adult" Westerns. These preferences are even more characteristic of viewers with some high school than of viewers in general (Steiner, 1963).

Frequent movie attenders have vicarious interest in luxury, mishaps-natural disasters, and eroticism. Males, unlike females, are interested in interpersonal violence, and females are more interested than males in the luxury and mishaps. (Anast, 1967)

No significant difference in influence of news stories was found between news-film, still-pictures, and man-on-camera versions of the same news. (Hazard, 1962) However, Yankelovich's (n.d.) findings indicate that effectiveness of radio commercials on stimulation-of-buying-interest does depend upon the content of, and method of, presentation. Characteristic of commercials which stimulated buying interest were: those with which the listener could identify; those which did not have distracting, confusing, elements; those which were not repetitious or phony sounding, and those which were informational, and fitted in with the listener's expectations.

Goldberg (1956) found that a black and white film using live actors and synchronous sound in depicting a realistic minority conflict situation (The High Wall) was effective in reducing anti-minority feelings, whereas, an abstract design film in color, with intensely dramatic narration and music, using a generalized approach (Boundary Lines, and Picture In Your Mind) produced no significant attitude change.

An experiment using subliminal messages on TV (Defleur and Petranoff, 1959) showed no effect. The results regarding the relative effectiveness of color vs black and white in films are inconclusive. (Chu and Schramm, 1968)

Field studies of the use of strong threat in mass media appeals to stop smoking or be safety conscious suggest this approach is not successful, except perhaps where interest is high (i.e. preexisting intention to stop smoking). (Naisbitt, 1961, Lane, 1960<sup>20</sup>) A study of the effect of mass media threat appeals regarding dangers of watching an eclipse of the sun was inconclusive due to the small sample interviewed (Kraus et. al., 1966).

There is evidence to suggest that the use in mass media appeals of prestigious persons with whom influencees may identify is more successful than the scare approach in effecting behavior change. (Blomgren, Jr. and Scheuneman, 1961) Other studies have shown the influence of prestigious persons and like character (age-sex) identification on opinion change and information recall (Greenhill, 1967; Mehling, 1959; Maccoby and Wilson, 1957). Berscheid (1965)<sup>21</sup> found that if an influencee cannot identify with the communicator's value system with respect to the general subject area of influence, he will change any specific opinions that may have been in agreement with the communicator's.

A one-sided argument may be preferable to a two-sided one in attempts to influence the less-educated. However, it may only serve to strengthen preexisting opinions already in agreement with the communication (Cox, 1964). Repetition of advertising appeals may actually reduce learning and/or the desired action, as well as produce negative attitudes (Scherwin, 1960, Greenhill, 1967).

#### SUMMARY

In order to induce fire prevention behavior among high fire risk young adults, it is necessary to change their customary fire-related practices (at least those that are indicated by poor fire prevention knowledge and attitude scores). Knowledge of their demographic characteristics (low socio-economic status) is not sufficient for determining how best to reach this target group, for persons with low socio-economic characteristics are known to be slow in changing customary practices. Therefore, much more information is needed regarding our target population's behavioral norms, interests, and values, in order to provide clues as to the context in which we should imbed mass media messages intended to attract their attention and change their behavior. There is also considerable question concerning the effectiveness of mass media in changing behavior. Person-to-person communication appears superior. If a mass medium is employed it appears to be more effective when backed up by person-to-person communication.

Findings of several studies suggest that our high fire risk group possesses many of the characteristics of groups found to have a higher than average incidence of TV watching. However, little research has been done to determine whether or not TV can effect behavior change or information gain. Also, on the basis of the results of several comparative studies, it is not possible to conclude that any one mass medium is more effective than another in producing change or information gain. Review of the evaluations of three intensive mass media campaigns employing numerous forms and quantities of publicity revealed that only one campaign was successful. Its success was attributed to personal contact rather than the large scale mass media efforts employed. Four out of six studies which compared the effectiveness of mass media vs or complemented by person-to-person communication showed the importance of person-to-person communication in effecting change. Where the mass medium employed was complemented by group discussion it was more effective than where the medium was used alone. Studies of the best method of personal contact suggest that a peer group leader, rather than an outside authority figure, is more likely to inspire behavioral change, especially if he involves group members in discussion and decision-making.

With respect to the context of the message to be communicated: repetition of the same commercial may actually reduce the incidence of the desired action; subliminally transmitted messages were not effective; research findings concerning the relative effectiveness of color vs black and white are inconclusive. There is evidence to suggest that the use in mass media appeals of prestigious persons with whom influencees may identify is more successful than the scare approach in effecting behavior change.

## CONCLUSION--PROBLEMS FOR STUDY

The foregoing review of literature suggests that we remain confronted in the field of communications research with two major problems:

- 1) What is the best context for our message?
- 2) What is the best method (mass media and/or personal contact) of transmitting that message?

Two major topics of study are suggested for solving these problems with respect to our target population. The studies, designated A and B, are listed below in the order of their priority. Study B must follow Study A if we are to be sure its results are applicable to our target group.

If we are to effectively utilize the mass media in fire prevention campaigns, we must acquire knowledge of the particular combination of beliefs, behavior patterns, and interests and values of the high fire risk group among young adults. The first study noted below (A.) concerns the acquisition of this knowledge necessary to solve the problem which we have formulated as: 'What is the best context for our message?' This is a descriptive study, the information for which could be obtained through a field survey (BUCO Resurvey). The second study (B.) which relates both to the contextual problem and the problem: 'What is the best method of transmitting our message?' is an experimental study or group of experimental studies.

A. Determine the Behavioral Norms, the Major Interests and Values of the High Fire Risk Population

1. What are their fashion tastes? grooming tastes--long or short hair, beards or not, "lacquered" wigs or hair hanging straight etc.?
2. What's the incidence of:
  - a) movie going? What do they see?
  - b) car ownership? type owned or interested in.
  - c) motorcycle ownership?
  - d) TV in family dwelling? When and what do they watch?
  - e) going to dances? What kind of music is preferred?
  - f) sports participation, spectatorship?
  - g) smoking? (Salber and Rochman, 1964)
  - h) attendance at religious organization meetings?  
When and what type?
  - i) attendance at youth organization meetings? When  
and what type?
3. Is the target group generally innovative or non-innovative?  
If generally non-innovative are there specific areas in which they are innovative?
4. Do they have high security orientation? (Ramsey, Polson, and Spencer, 1959).
5. Are they low in optimism (fatalistic)? (Bylund, 1963)
6. Are they alienated? (McLeod, 1964-65).

B. Determine the Best Context for (Fire Prevention) Messages and the Best Method for Transmitting Them to the Target (High Fire Risk) Population

The importance of selective exposure, selection, and retention with respect to whether a message is even perceived or remembered is antithetical to the use of laboratory experiments with captive audiences. This necessitates the use of field experiments in which an adequate sample of our target population is interviewed before and after, or after, an attempt has been made to convey a fire prevention message to it.<sup>22</sup> If we are concerned with knowing which particular context for our fire prevention message is most effective it will be necessary to conduct a separate field experiment for each contextual variable (Hypotheses I and A and B). If we are not, then several contextual variables may be contained in one experimental study. Another problem arises because of the impossibility, in a field experiment, of randomizing treatments which consist of TV spots shown on commercial channels. Therefore, matched high fire risk groups are required that are environmentally separate enough that they are not contaminated by another group's experimental TV spot treatment.

Hypotheses which should be tested under this major study area are listed below.

Hypothesis I: If Fire Prevention Propaganda And Information Is Linked With Something Highly Valued By Our Target Members, They Are More Likely To Act Upon It Than If A Traditional Fire Prevention Message Is Presented.

Corollary Hypothesis A: The Portrayal In Mass Media Of A Person Or Persons Prestigious To Our Target Group, As Transmitter Of Our Message, Will Be More Effective In Changing Attitudes And Behavior Than The Portrayal Of A Fire Prevention Officer, Or Smokey Bear, As The Transmitter Of The Message.

Corollary Hypothesis B: 1) If The Something Valued Is Threatened The Communication Will Be More Effective In Changing Behavior Or Attitude In Our Target Population (Low-Income, Low Education) Then If It Is Not Threatened. 2) This Will Be Truer For The Non-Fatalistic Than The Fatalistic.

Corollary Hypothesis C: 1) Followers As Well As Leaders Learn Of Innovative Behaviors, Or News, First Through Mass Media And Then Seek Further Information Or Confirmation From Personal Sources As Well As Other Mass Media Sources Before They Decide To Change Their Attitudes Or Behavior. 2) If A Leader Decides To Change, He Will Actively Influence Others To Follow Suit.

An elaborate study could be designed such that Hypothesis II, below, could be tested along with Hypothesis I, and some or all of its Corollaries. However, it is probably preferable that Hypothesis II be tested in a separate study.

Hypothesis II: Person-To-Person Communication Alone, Or In Combination With Mass Media, Is More Effective Than Mass Media Alone In Effecting Normative Behavioral Change.

Corollary Hypothesis A: Persuasion Through Personal Contact Is Best Achieved By Hiring A Professional Community Organizer Who Has Rapport With Peer Leaders Of Primary Friendship Groups Which Exist In Secondary Associations (Koos, 1943) Such As Religious And Youth Organizations. (These may include informal as well as formal youth organizations.) i.e. The professional community organizer will be more likely than a Forest Ranger to convince the peer leaders to initiate group action (discussion followed by decision) which results in appropriate fire prevention conduct.

# FOOTNOTES

- (1) As calculated from January-December 1968 statistics on forest fires on State Responsibility Lands and National Forests as supplied by State of California, The Resources Agency, Department of Conservation, Division of Forestry.
- (2) CDF, California Fire Prevention Notes, October 1968.
- (3) According to the 1960 census there were in California, at that time, 471,470 persons age 14-24 years of age not currently enrolled in school who had less than a high school diploma. If we were able to subtract those who are 14-17 years of age, and those others who do not possess the characteristics of our target group, then we would find that this particular target group in California would be considerably less than a half million persons.
- (4) Source: Interpolation from Table VII. p. 785 (Salber and Rochman, 1962).
- (5) See Rogers (1969, p. 187) on the importance of knowledge of 'clients' cultural beliefs, attitudes and values.
- (6) Although we are concerned here mainly with fires started through carelessness, it is interesting to note Shea's statement, that incendiarism is largely the result of social frustrations experienced by rural people, and his suggestion that control over the situation could be had by providing additional recreational, social and cultural opportunities for the inhabitants of forested areas. J. P. Shea et. al., Man Caused Forest Fires: The Psychologist Makes a Diagnosis. U. S. Dept. of Agri. Forest Service, 1939. and J. P. Shea, Getting

- (7) In: Van Den Ban, (1964). p. 238.
- (8) As cited in Van Den Ban, Loc. Cit.
- (9) Dickerson, Ben E., and Alvin L. Bertrand. The roles of local opinion leaders in the communication of forest fire prevention messages. Louisiana State Univ. Agri. Exp. Sta. and U. S. Forest Service Southern For. Exp. Sta. 34 p.
- (10) Kirchner, D. F. 1969. Personal influence--An alternate point of view. Copy of a paper presented at the Pacific Chapter AAPOR: Feb. 28-March 2. 13 p. and Appendices A-C.
- (11) See also Schulman, Gary I. 1964. The two step flow hypothesis of mass communication: A reformulation using cognitive dissonance theory. Stanford Univ. PhD. Thesis in Sociology: Dec.
- (12) Passive leader and active follower may also be separate roles but Kirchner found correlation between the above paired roles.
- (13) Another hypothesis that might be tested is: If a person is pre-disposed to a certain behavioral change or interested in the subject matter of a news event he will probably use both mass media and personal sources of information before he decides finally to change his behavior or accept the news. After his decision, if he is an active leader he may actively influence others to change or accept. However, Rogers (1969, p. 223) states that the communication flow is usually initiated by opinion seekers rather than opinion leaders. Also see Rogers (1969, p. 222) for a list of shortcomings of the two-step flow hypothesis.

- (14) See also Rue, James Joseph. 1954. An experimental study of the relative effectiveness of certain types of radio and television commercials. PhD. Thesis, Graduate School, Univ. of Southern California.
- (15) Skinner, Harold R. 1963. Individual differences in susceptibility to persuasive messages communicated via print, tape recordings, and motion pictures. Indiana Univ. PhD. Thesis in Education: June.
- (16) A. F. Van Horn, Secretary-Manager of Keep California Green, Inc., in a presentation before the California State Board of Forestry stated, "Our theory is that the general public will become more fire conscious when approached by an individual or organization outside of the regular suppression agencies. We strive to field local programs, conducted by local people, that are aimed at a specific local problem. These are programs intended to get the individual to THINK fire prevention in terms of their own behavior patterns and established habits; then to TALK fire prevention in their community at every opportunity. With enough of this you soon find that an entire community is actually practicing good fire habits--whether from fear of enforcement, fear of ridicule from neighbors or just as a result of being informed." p. 15 in State of California Division of Forestry. Children Caused Fires (Sacramento, July 18, 1968).

- (17) In China, study groups are considered essential elements in the Special Communication Campaigns launched to achieve goals (some of which might be considered to have elements similar to fire prevention measures) such as anti-spitting, fly killing, river swimming, etc. See Rogers (1969, p. 140).
- (18) Gunn, Barbara Aileen. 1960. Group structure and opinion change: A study in small groups and mass communications. Stanford Univ. Sociology Dept. PhD. Thesis: August, 1960.
- (19) Fuenning, S. I., M.D. 1968. A peer group approach to a smoking education program in a university setting. Univ. of Nebraska, Health Center Smoking Education Project Contract #PH 108- 66- 199: July 1966- June 1968. 35 pp.
- (20) Lane, Jonathan P. 1960. Smokers reactions to a television program about lung cancer: A study of dissonance. Stanford Univ. PhD. Thesis in Mass Communications Research: July.
- (21) Berscheid, Ellen. 1965. The effects of communicator-communicatee value similarity and dissimilarity upon opinion change. PhD. Thesis, Univ. of Minnesota.
- (22) If we merely wished to know whether members of our target population were aware of any of a number of varying (TV) communications conveying fire prevention messages, rather than whether the communications effected behavior change, then we need only ask them, after exposure to these (TV) communications, various questions to determine which, if any, they noticed and what were their subjective reactions. (TV spots could be shown prior to the BUCO Resurvey).

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